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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,784	11/02/2001	Kevin A. Marshall	20910/0206142-US0	3211

62663 7590 02/21/2008
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EXAMINER

KENDALL, CHUCK O

ART UNIT	PAPER NUMBER
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2192

MAIL DATE	DELIVERY MODE
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02/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/052,784

Applicant(s)

MARSHALL, KEVIN A.

Examiner

Chuck O. Kendall

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,7-14 and 16 - 24 is/are pending in the application.
- 4a) Of the above claim(s) 3,6 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-14 and 16 - 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This is in response to response filed 11/27/07.
2. Claims 1, 2, 4, 5, 7 – 14, and 16 – 24 have been amended.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2 and 22 – 24 are rejected under 35 U.S.C. 103(a) as being anticipated by Arbousov USPN 5,701,487 and in view of Clark et al. USPN 6,401, 217(art being made of record).

Regarding claims 1 and 22, Arbousov teaches a method (8:40 – 9:50), apparatus (9:50-10:62) comprising a processor a memory, and a computer-readable medium storing instructions for automatically generating data regarding errors in a software system, the software system including one or more software components the method comprising:

determining a size of the one or more software components responsible for the errors (5:60 – 6:5, shows obtaining a history and error lines of codes which corresponds to the leaves of the trees); and

Although Arbousov doesn't expressly disclose a number of the errors, attributed to each of the software components determined to be responsible for the errors in the software system during execution of the one or more responsible software components included in the software system, he does disclose determining errors during compilation of the code and also executing software instructions, such as software instructions of preprocessor 108 or of compiler 108, (6:10 – 15 also see 2:1 – 5 and 2:18 – 23 and). However, Clark in analogous art and similar configuration discloses recognizing errors in a processor system providing the operating system with at least one error message table in which are stored a number of said error messages and the faulty programs responsible (11:20 - 34). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Arbousov and Clark because, it would enable determining the specific errors and components/programs that caused them as taught by Clark above.

Regarding claim 2, the rejection of base claim 1 is incorporated. Arbousov teaches correlating the size of the determined software components with the number of errors attributed to the determined software components (Arbousov, 5:60 – 6:5, shows obtaining a history and error lines of codes which corresponds to the leaves of the trees). Arbousov doesn't explicitly disclose enabling data indicating a probability of errors occurring during execution of a set of software components to be generated from the determined size of the software components determined to be responsible for the errors and the number of the

errors attributed to each of the software components determined to be responsible for the errors.

However, Clark in an analogous art and similar configuration discloses, that "...the section 11 contains at least one error message table for statistical enumeration of error messages over respectively predetermined time spans that are determined as monitoring intervals. When a counter reading of a counter for a respective process reaches or exceeds a predetermined value, this is classified as reaching the threshold. When such a threshold is reached, a decision is made with respect to the startup level and the filters to be utilized..." (8:35 – 43). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Arbousov and Clark because it would enable monitoring errors that have occurred frequently as suggested by Clark above.

Regarding claims 23 and 24 recite an apparatus version of the method addressed in claim 1, therefore, are rejected for the same reasons as cited in claim 1.

5. Claims 4 – 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbousov USPN 5,701,487 and in view of Clark et al. USPN 6,401, 217 (art being made of record) as applied in claim 1 and further in view of Ruhlen et al. (US 6665824), hereinafter, Ruhlen et al.

Regarding claim 4, the rejection of base claim 1 is incorporated. Although, Arbousov as modified by Clark does not expressly disclose the contents of one

or more files examined further indicating one or more source code modifications made in response to the errors, Clark does discuss having correction actions regarding errors as disclosed in this error message table in FIG.2.

However, Ruhlen et al. disclose a method for tracking/counting errors which occur during the execution of the software components (e.g., col.1:15-18, col.1:23-28, see failure reporting executable 230 FIG.2 & associated text) in a software system including one or more software components (e.g., col.1:4:10-13), storing the modifications (i.e., source code changes) made in response to the errors (e.g., col.1:3:63-67), in a file (e.g., see repository 235 FIG.2 & associated text, col.2:11-13). Therefore, It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to incorporate the teaching of Ruhlen et al. into that of Arbousov and Clark to include tracking and storing modifications made in response to the errors because it would minimize the time and cost of error query processing as conventionally performed by a computer program, thus improving the technique for locating of errors in a software system and improve the handling of error queries and technical support in an environment where the software system is distributed and used by a large number of clients (e.g., see motivation suggested by Ruhlen et al. col.1: 29 – 36; col.1:43-65).

Regarding claim 5, the base rejection claim 4 is incorporated. Ruhlen et al. further teaches wherein determining from the one or more files one or more of the software components responsible for the errors comprises: determining from

the source code modifications/changes (e.g., see application version number, module version number col. 6:65 - col.7: 3, see "10.0.2310.1 ", "10.0.2312.1" col.7:10 - 25) one or more software components modified (e.g., see application program name, module name col.6:66-col.7:3, see "Winword.exe", "mso.dll" col.7:10-25) to correct the errors (e.g., see failing instruction's instruction pointer col.6:66-col.7:3, see "Obcd1234" col.7:10-25). Therefore, It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made combine the teachings of Arbousov as modified by Clark because it would enable making program changes based on the errors as suggested by Ruhlen above.

6. Claims 7 – 9 and 13 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbousov USPN 5,701,487 as applied in claim 1 in view of Clark et al. USPN 6,401, 217 (art being made of record) as applied in claim 1 and further in view of Leung USPN 6,769,114.

Regarding claim 7, Arbousov as modified by Clark teaches all the claimed limitations as recited in claim above 1. The combination of Arbousov and Clark does not explicitly disclose wherein examining the contents of one or more files indicating one or more errors in the software system comprises generating list of one or more errors corresponding to source code changes and a list of one more files associated with successful attempts to correct the errors. However, Leung discloses a method (e.g., see Abstract) of tracking/associating errors (e.g.,

col.6:25-41) with modifications (i.e., versions, files, source code changes) (e.g., see software modifications col.3:25-29, see second version col.1.9:20-23, col.12:58-61) and associating modifications with successful attempts (e.g., see previous passed integration tests col.3:25-29, col.1.9:20-23) to correct the errors (e.g., col.1:19-23, see interface error col.9:27-28, see sequence error col.9:31-32, col.12:62-64, col.11:1-6).

Therefore, It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made modify the teaching of Abrouzov and Clark with that of Leung to include the associating of modifications with successful attempts to correct the errors because it would monitor the modifications of software components and prevent them from invalidating previous tested and passed versions (i.e., successful attempts to correct errors/defects) of the software components (see motivation suggested by Leung Abstract; col.1: 24-50; col.6:42-46; col.6:65-col.7:5; col.10:13-20; col.14:42-47; col.15:19-30).

Regarding claims 13 – 14, claims recite limitations which have been addressed in claims 4 and 7, therefore, are rejected for the same reasons as cited in claims 4 and 7.

Regarding claim 8, the method as recited in claim 7, wherein examining contents of one or more files further comprises correlating a file in the list of files associated with successful attempts to correct errors with one of the source code

changes corresponding to at least one of the list of errors (Leung, e.g., see previous passed integration tests col.3:25-29, co1.9:20-23) to correct the errors (e.g., col.1:19-23, see interface error col.9:27 28, see sequence error col.9:31-32, col.12:62-64, col.11:1-6).

Regarding claim 9, the method as recited in claim 8, wherein correlating a file in the list of files associated with successful attempts to correct errors with one of the source code changes corresponding to at least one of the list errors comprises examining an individual file history for at least one file in the list of files (Arbouzov, 5:60 – 6:5, shows obtaining a history and error lines of codes which corresponds to the leaves of the trees also see Leung, for previous passed integration tests col.3:25-29, co1.9:20-23).

Regarding claims 13 and 14, the method as recited in claim 7, wherein the list of files contains information identifying the version of the file and one or more identifiers to identify one or more errors associated with the version of the file, (Leung (e.g., col.6:25-41) with modifications (i.e., versions, files, source code changes).

7. Claims 10 – 12, 17 – 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbouzov USPN 5,701,487 and in view of Clark et al. USPN 6,401, 217 (art being made of record) as applied in claim 1, and further in view Hanson (US 5946493), hereinafter Hanson.

Regarding claim 10, the rejection of base claim 1 is incorporated.

Arbouzov as modified by Clark teaches wherein determining a size of the one or more software components responsible for the errors (see Abrouzov, claim 5).

The combination of Arbouzov and Clark does not expressly disclose determining start and end lines of a section of code modified to fix error.

However, Hanson discloses a method (e.g., see Abstract) for determining the start (e.g., see first line 112 FIG.3A & associated text) and end lines (e.g., see last annotated line 116 FIG.3A & associated text) of a section of code (e.g., see FIG.2A, 213, 2D & associated text), matching one or more line numbers associated with source code against compiled information (e.g., see 101 FIG.3A & associated text) associated with the source code (e.g., see 106 FIG.3A & associated text, col.1:32-36, col.1:53-58), converting the start (e.g., see (JOJ FIG.2A & associated text) and end lines (e.g., see j12J FIG.2A & associated text) of a section of source code to the start (e.g., see 28 FIG.2B & associated text) and end lines of a current version (e.g., see 40 FIG.2 B & associated text, see object code col.1:32-36) of a file (e.g., see 108 FIG.3A & associated text).

Therefore, It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made modify the teaching of Arbouzov and Clark with Hanson because it would have enabled generating a listing associating/mapping the object code (compiled) instructions with the source code instructions which can be used to debug the program, investigate performance problems, and improve the analysis of the quality of the compiled object code (see motivation suggested by Hanson col.1: 42-60).

Regarding Claims 11 – 12, 17 – 19, 21, Claims recite limitations which have been addressed in claims 5 and 10, therefore, are rejected for the same reasons as cited in claims 5 and 10.

Regarding claim 20, the rejection of base claim 18 is incorporated. The combination of Arbousov as modified by Clark doesn't teach comparing information associated with a source code to determine one or more line numbers associated with the modified source code. However,

Hanson teaches comparing information associated with one more versions of the source code to determine one or more line numbers associated with the modified source code (e.g., see 108 FIG.3A 8 associated text). Therefore, It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to combine the teachings of Hanson and Arbousov as modified with Clark because, it would enable determining the location of errors in the source code as suggested by Hanson above.

Response to Arguments

8. Applicant's arguments with respect to claims 1 – 2, 4 – 5, 7 – 14 and 16 – 24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9.

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuck Kendall whose telephone number is 571-272-3698. The examiner can normally be reached on 10:00 am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Chuck O Kendall/

Primary Examiner, Art Unit 2192